REMARKS

The Office Action dated May 13, 2005, has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 2, 5, 7, 9, 10, 13, 16-18, and 20-23 are amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter is added. Support for the amendments may be found throughout the specification, for example, on pages 6-9. Thus, claims 2-23 are pending in the present application, and respectfully are submitted for consideration.

Claims 2-9, 16 and 20-23 were objected to for informalities. Applicant amends the claims to correct the informalities. Referring to the objection of 16, however, applicant respectfully traverses the objection. The Office Action objects to claim 16 because of the feature "all subcircuits except for said transmitter pulse." Applicant submits that claim 16 properly recites the subject matter of the invention. Applicant did not limit the base claim or any intervening claim to a transceiver having only a transmitter subcircuit and a receiver subcircuit. The claimed transceiver also may include other elements that are not specifically recited in claim 16. Further, applicant notes use of the transitional phrase "comprising" in the claims. According to MPEP 2111.03, the transitional phrase "comprising" is defined as being "inclusive or open-ended and does not exclude additional, unrecited elements or method steps." Applicant maintains that claim 16 is not required to list every possible subcircuit of the transceiver in the claims.

Thus, applicant submits that claim 16 is in proper form and that the objection be withdrawn.

Claims 2-23 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant amends the claims to correct informalities within the claims. Thus, claims 2-23 comply with 35 U.S.C. § 112, second paragraph. Applicant respectfully requests that the indefiniteness rejection be withdrawn.

Claims 2-6 and 21 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,404,544 (Crayford) in view of U.S. Patent No. 6,434,187 (Beard et al.) and Application Note LM20/25 (Appln Note). The Office Action took the position that Crayford taught all the elements of claims 2-6 and 21 except separate power suppliers to the driver and the receiver of a transceiver. Beard was cited by the Office Action as providing this element missing Crayford. The Office Action also alleged that Crayford failed to teach the signaling used in the essential auto-negotiation of a LAN transceiver entering the powered-on mode to transmit data. The Appln Note was cited by the Office Action as providing this element missing from Crayford. Applicant notes that the alleged element of the Appln Note is not recited in the independent claims. Applicant respectfully submits that Crayford, Beard and the Appln Note, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims.

Claim 2, upon which claims 3-6 are dependent, recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes a transmitter subcircuit transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes a receiver subcircuit. The transmitter subcircuit and the receiver subcircuit each have its own power supply and means for activation and deactivation on the transceiver circuit. When the transmitter subcircuit is in a power-on mode, the transmitter subcircuit transmits the another pulse for indicating the power-on status and uses a second clock management mode.

Claim 21 recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes transmitter subcircuit means for transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes receiver subcircuit means for receiving data. The transmitter subcircuit means and the receiver subcircuit means each have its own power supply and means for activation and deactivation on the transceiver circuit. When the transmitter subcircuit means is in a power-on mode, the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses a second clock management mode.

As discussed in the specification, examples of the present invention enable the minimizing of power consumption during an idle period. The power consumption of the

transceiver circuit may be reduced by providing each defined subcircuit with its own power supply and means of activation and deactivation and different clock management modes. A normal link pulse may be used rather than the MLT3 signal type to indicate a status for a live connection for transceiver circuits. Because the MLT3 signal type consumes more power than a normal link pulse, the energy may be reduced that is needed to indicate that the transceiver is alive and available in a power-down mode. Further, different clock management modes may prevent unnecessary clock operations. Applicant respectfully submits that the cited references of Crayford, Beard and the Appln Note, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims. Therefore, the cited references fail to provide the critical and unobvious advantages discussed above.

Crayford relates to a system for periodically transmitting signals to and from a sleeping mode identifying its existence to a network and awakening the sleeping mode in response to received instructions. During a link good condition of Crayford, a transceiver outputs a link status signal. A media access controller (MAC) 30 uses the link status signal to provide power management. By using a programmable AWAKE bit, the receiver section of the transceiver remains powered, even if the SLEEP input to MAC 30 is activated. Detection by MAC 30 of link beat pulses 60 produced by transceiver 37 and transceiver 37a are used to establish that a link in the network is in place. Thus, the health of the communication link can be permanently monitored. By using the AWAKE bit, the receiver section of transceiver 37 can remain powered even if a sleep input to

MAC 30 is activated. If the link status output is active, then a computer is connected to an active network and it is likely that the operating system will allow MAC 30 to remain powered. If the link status output becomes inactive, then the system can assume that the link is inactive, and MAC 30 can be powered down to save power. If, at a later time, the link is reestablished, MAC 30 can be powered back up to take advantage of the communications channel.

Beard relates to a digital radiofrequency transceiver. Beard describes different components of transceiver 10 being powered by different power supplies to conserve power. Figure 3 of Beard shows a power supply circuit 16. Analog power circuit 120 creates 5-volt AVCC 82 from VCC 80. Each 3-volt analog power supply 122, 124 and 126 powers separate portions of the transceiver circuitry, and separate voltage regulators U3, U16 and U11 minimize noise between circuits. Signal TRANSMIT 60 controls U3, such that when signal TRANSMIT 60 is not asserted, VCCTXPA 84 is disabled, and power is not supplied to transmitter power amplifier 24. Signal RECEIVE 62 is coupled to the control inputs EN of U16 and U11, such that when signal RECEIVE 62 is not asserted, both VCCLNA 86 and VCCRX 88 are disabled, and power is not supplied to low-noise amplifer 44, mixer 46 or FM demodulator 50 of receiver 14.

The Appln Note relates to physical layer link signaling for 100baseTX and 10baseT networks. The Appln Note describes that the IEEE 802.3u standard maintains equipment interoperability even with variation in LAN product capabilities by including a Physical Layer signaling scheme. Signaling is used as a handshake between two

connected pieces of LAN equipment, or link partners, and is accomplished by exchanging a burst of pulses called Fast Link Pulses (FLPs) that form a Link Code Word. The Link Code Word of the Appln Note describes the capabilities and fault status of the transmitting equipment, which is compared to the capabilities of the receiving equipment. A link is established based on the highest common mode of operation. The process of establishing a link by exchanging Link Code Words is called Auto-negotiation and must be completed prior to any data being transmitted. The fast Ethernet link partners exchange bursts of Fast Link Pulses that form a Link Code Word. The Link Code Word consists of 16 encoded data bits that provide detailed information about the transmitting equipment.

Applicant submits that Crayford, Beard and the Appln Note, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims. For example, Crayford, Beard and the Appln Note fail to disclose or suggest a transmitter subcircuit transmitting a pulse during a powered-down mode and using a first clock management mode and the transmitter subcircuit transmitting the another pulse for indicating the power-on status and using a second clock management mode. Applicant maintains that Crayford fails to disclose or suggest two different clock management modes for indicating a status in the transceiver. The two different modes result from the different power requirements for the powered-down mode and the powered-up status. The two clock management modes allow the transceiver circuit to operate according to the different statuses or modes. Crayford fails to disclose or suggest this feature because

MAC 30 is not within transceiver 37. Thus, transceiver 37 of Crayford does not operate in different clock modes.

Beard also fails to disclose or suggest the features missing from Crayford, either alone or in combination with Crayford. As discussed above, Beard describes different power supplies for different components of transceiver 10. Beard, however, fails to use different clock modes in supplying power to transceiver 10. Thus, applicant submits that Beard fails to disclose or suggest a clock management mode for a powered-down mode and another clock management mode for a powered-up status, as claimed.

Further, the Appln Note fails to disclose or suggest the features missing from Crayford and Beard. As discussed above, the Appln Note describes establishing a link by exchanging Link Code Words. The Appln Note fails to use different clock management modes in establishing links or in the signaling operations. Thus, the Appln Note fails to disclose or suggest using a first and second clock management modes.

In contrast, claim 2 recites "a transmitter subcircuit transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode" and "the transmitter subcircuit transmits the another pulse for indicating the power-on status and uses a second clock management mode." Claim 21 recites "transmitter subcircuit means for transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode" and "the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses a second clock management mode." Applicant, for the reasons given above, maintains that Crayford, Beard and the

Appln Note, either alone or in combination, fail to disclose or suggest at least these features of the presently pending claims.

With regard to the dependent claims, applicant submits that the dependent claims are allowable for the reasons given, and because the dependent claims recite additional patentable subject matter. Thus, applicant maintains that Crayford, Beard and the Appln Note fail to disclose or suggest all the features of claims 2-6 and 21. Applicant respectfully requests that the obviousness rejection of these claims be withdrawn.

Claims 7-20 and 22-23 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Crayford in view of Beard and the Appln Note, and further in view of U.S. Patent No. 6,198,727 (Wakeley et al.). The Office Action took the position that Crayford, Beard and the Appln Note taught all the elements of claims 7-20 and 22-23 except the receiver having a media independent interface. The Office Action alleged that Wakeley provided the features of the claims missing from Crayford, Beard and the Appln Note. Applicant respectfully submits that Crayford, Beard, the Appln Note and Wakeley, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims.

Claims 7-9 depend from claim 2, which is discussed above. Applicant notes that claims 7-9 include the features of claim 2, and other features.

Claim 10, upon which claims 11-16 are dependent, recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes a transmitter subcircuit transmitting a pulse during a powered-down mode to indicate a status and

using a first clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes a receiver subcircuit having a media independent interface for receiving data. The media independent interface remains power-on during the powered-down mode. The transmitter subcircuit and the receiver subcircuit each have its own power supply and means for activation and deactivation on the transceiver circuit. When the transmitter subcircuit is in a power-on mode, the transmitter subcircuit transmits the another pulse for indicating the power-on status and uses a second clock management mode.

Claim 17, upon which claims 18-20 are dependent, recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes a transmitter subcircuit transmitting a minimally powered link pulse during a powered-down mode to indicate status using a clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes a receiver subcircuit having a media independent interface for receiving data. The media independent interface remains power-on during the powered-down mode and the clock management mode, and upon receiving signal activity activates the transceiver into a power-on mode. The transmitter subcircuit and the receiver subcircuit each have its own power supply and means for activation and deactivation on the transceiver circuit. When the transmitter subcircuit is in the power-on mode, the transmitter subcircuit transmits the another pulse for indicating the power-on status using another clock management mode.

Claim 22 recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes transmitter subcircuit means for transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes receiver subcircuit means having a media independent interface for receiving data. The media independent interface remains power-on during the powered-down mode. The transmitter subcircuit means and the receiver subcircuit means each have its own power supply and means for activation and deactivation on the transceiver. When the transmitter subcircuit means is in a power-on mode, the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses a second clock management mode.

Claim 23 recites a transceiver circuit for transmitting and receiving data signals. The transceiver circuit includes a transmitter subcircuit means for transmitting a minimally powered link pulse during a powered-down mode to indicate a status and using a clock management mode. The pulse differs from another pulse for indicating a power-on status. The transceiver circuit also includes a receiver subcircuit means having a media independent interface for receiving data. The media independent interface remains power-on during the powered-down mode and uses the clock management mode, and upon receiving signal activity activates the transceiver into a power-on mode. The transmitter subcircuit means and the receiver subcircuit means each have its own power supply and means for activation and deactivation on the transceiver circuit. When the

transmitter subcircuit means is in the power-on mode, the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses another clock management mode.

Crayford, Beard and the Appln Note are discussed above. Applicant submits that claims 7-20 and 22-23 are distinguishable from these references for at least the reasons given above.

Wakeley relates to a method and apparatus for providing 10BASE-T/100BASE-TX link assurance. Wakeley describes a link device that establishes links to partners regardless of their capability without the need to select a mode of operation manually. Wakeley describes an algorithm that assures linkability between those devices that are not 100% compliant with IEEE 802.3. Using this algorithm, Wakeley describes a link device linking with legacy partners. Thus, a link assurance firmware algorithm allows a plug-and-play-like interoperability between any combinations of devices, regardless of the differences in the capabilities. Referring to steps 104 and 106 in Figure 2 of Wakeley, the transmitter output is turned off or on according to the firmware algorithm.

Applicant submits that Crayford, Beard, the Appln Note and Wakeley, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims. For example, applicant submits that the cited references fail to disclose or suggest a transmitter subcircuit transmitting a pulse during a powered-down mode and using a first clock management mode and the transmitter subcircuit transmitting the another pulse for indicating the power-on status and using a second clock management

mode. As discussed above, Crayford, Beard and the Appln Note fail to disclose or suggest at least these features of the claims.

Applicant also submits that Wakeley fails to disclose or suggest those features of the claims missing from Crayford, Beard and the Appln Note. Referring to Figure 2 of Wakeley, step 104 describes the firmware exiting a link assurance algorithm and assuming normal operation if a link is established. If a link is not established, Wakeley describes the firmware turning off the transmitter output of the physical layer device for an interval in step 106. Wakeley fails to disclose or suggest using different clock management modes when establishing a link. Instead, Wakeley describes only the transmitter output being turned off for an interval if a link is not established. Thus, applicant submits that Wakeley fails to disclose or suggest those features of the claims missing from Crayford, Beard and the Appln Note.

In contrast, claims 2 and 10 recite "a transmitter subcircuit transmitting a pulse during a powered-down mode to indicate a status and using a first clock management mode" and "the transmitter subcircuit transmits the another pulse for indicating the power-on status and uses a second clock management mode." Claim 17 recites "a transmitter subcircuit transmitting a minimally powered link pulse during a powered-down mode to indicate status using a clock management mode" and "the transmitter subcircuit transmits the another pulse for indicating the power-on status using another clock management mode." Claims 21 and 22 recite "transmitter subcircuit means for transmitting a pulse during a powered-down mode to indicate a status and using a first

clock management mode" and "the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses a second clock management mode." Claim 23 recites "a transmitter subcircuit means for transmitting a minimally powered link pulse during a powered-down mode to indicate a status and using a clock management mode" and "the transmitter subcircuit means transmits the another pulse for indicating the power-on status and uses another clock management mode." Applicant respectfully submits, for the reasons given above, that the cited references, either alone or in combination, fail to disclose or suggest at least these features of the presently pending claims.

The remaining dependent claims also are not disclosed or suggested by the cited references for at least the reasons given above, and because they recite additional subject matter that is not disclosed or suggested by the cited references. For at least these reasons, applicant submits that claims 7-20 and 22-23 are not disclosed or suggested by Crayford, Beard, the Appln Note and Wakeley. Applicant respectfully requests that the obviousness rejection be withdrawn.

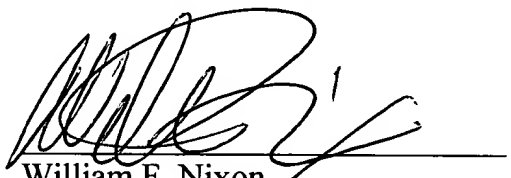
Applicant respectfully submits that each of claims 2-23 recite subject matter that is neither disclosed nor suggested by Crayford, Beard, the Appln Note and Wakeley. Therefore, applicant respectfully requests that all of claims 2-23 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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